Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

1319: Research, Development, Test & Evaluation, Navy

PE 0604329N: Small Diameter Bomb (SDB)

BA 5: Development & Demonstration (SDD)

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	18.918	43.717	44.091	0.000	44.091	74.918	37.598	42.912	39.964	Continuing	Continuing
3072: Small Diameter Bomb (SDB)	18.918	43.717	44.091	0.000	44.091	74.918	37.598	42.912	39.964	Continuing	Continuing

Note

In FY 2010, funding for Hard Target Void Sensing Fuze (HTVSF) and Joint Surface Warfare (JSuW) have been moved to PE 0604659N, PU 3214 and PU 3215, respectively.

A. Mission Description and Budget Item Justification

Small Diameter Bomb (SDB) Increment II is an ACAT ID program providing the warfighter a capability to attack mobile targets in all weather from Stand-Off. The Air Force is the executive service. SDB Increment II addresses the following warfighter requirements: attack mobile targets; multiple kills per pass; multiple ordnance carriage; all weather operations; near-precision munitions capability; capability against fixed targets; reduced munitions footprint; increased weapons effectiveness; minimized potential for collateral damage; reduced susceptibility of munitions to countermeasures; and a migration path to net centric ops capability. Threshold aircraft is the F-15E for the Air Force and F-35 B and F-35 C for the Navy. Objective aircraft include the F/A-22, B-1, B-2, F-117, F-16, B-52, Predator B, and F/A-18 E/F. SDB II must be operable on the Miniature Munitions Smart Rack BRU-61/A. This rack is currently in production in the USAF, but has never been qualified to DoN environments, nor flown internally in any variant of F-35. Efforts include a Dual Power modification, ensuring adequate power supplied to BRU-61 to meet the SDBII operating environment. SDB Increment II will continue incremental development to pursue network CENTRIC interoperability. SDB increment II is a key component of the Air Force's Global Strike Task Force CONOP.

Navy funding will provide for risk reduction activities, participation in common efforts, F-35B and F-35C integration efforts, to include Operational Flight Plan (OFP) development, and development and evaluation of Navy-unique and interoperability requirements, to include BRU-61/A efforts. Navy SDB II Initial Operating Capability is scheduled for FY 2016 on JSF Short Take-Off Vertical Landing (STOVL) F-35B and Navy Variant (F-35C) aircraft. Additionally, FY 2009 and prior year Navy funding is provided to conduct weapons data link message development and testing through Joint Capability Technology Demonstration (JCTD) efforts to achieve risk reduction efforts and weapons interoperability. The Joint Surface Warfare (JSuW) is one current JCTD being conducted to analyze weapons data link message development.

Exhibit R-2, **RDT&E Budget Item Justification:** PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

1319: Research, Development, Test & Evaluation, Navy

PE 0604329N: Small Diameter Bomb (SDB)

BA 5: Development & Demonstration (SDD)

B. Program Change Summary (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	19.485	43.902	0.000	0.000	0.000
Current President's Budget	18.918	43.717	44.091	0.000	44.091
Total Adjustments	-0.567	-0.185	44.091	0.000	44.091
 Congressional General Reductions 		-0.182			
 Congressional Directed Reductions 		0.000			
 Congressional Rescissions 	0.000	-0.003			
 Congressional Adds 		0.000			
 Congressional Directed Transfers 		0.000			
 Reprogrammings 	0.000	0.000			
 SBIR/STTR Transfer 	-0.567	0.000			
 Program Adjustments 	0.000	0.000	44.091	0.000	44.091

Change Summary Explanation

Technical: Ship Suitability is more accurately defined as the BRU-61/A efforts. Included in those are the Dual Power and SDB II Qualification efforts.

Schedule: As a result in the delay of the approved Acquisition Strategy the following milestones have changed: Milestone B from 1Q FY10 to 2Q FY10, Critical Design Review (CDR) from 1Q FY10 to 3Q FY10, EMD Downselect from 1Q FY10 to 2Q FY10 and Engineering Manufacturing and Development (EMD) from 1Q FY10 to 2Q FY10. Additionally, System Development and Demonstration changed terminology to EMD per new DoDI 5000.02 instruction.

FY11 from previous President's Budget is shown as zero because no FY11-15 data was presented in President's Budget 2010.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

PROJECT

1319: Research, Development, Test & Evaluation, Navy

PE 0604329N: Small Diameter Bomb (SDB)

3072: Small Diameter Bomb (SDB)

BA 5: Development & Demonstration (SDD)

DA 3. Development & Demonstration	1 (300)										
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
3072: Small Diameter Bomb (SDB)	18.918	43.717	44.091	0.000	44.091	74.918	37.598	42.912	39.964	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Small Diameter Bomb (SDB) Increment II is an ACAT ID program providing the warfighter a capability to attack mobile targets in all weather from Stand-Off. The Air Force is the executive service. SDB Increment II addresses the following warfighter requirements: attack mobile targets; multiple kills per pass; multiple ordnance carriage; all weather operations; near-precision munitions capability; capability against fixed targets; reduced munitions footprint; increased weapons effectiveness; minimized potential for collateral damage; reduced susceptibility of munitions to countermeasures; and a migration path to net centric ops capability. Threshold aircraft is the F-15E for the Air Force and F-35 B and F-35 C for the Navy. Objective aircraft include the F/A-22, B-1, B-2, F-117, F-16, B-52, Predator B, and F/A-18 E/F. SDB II must be operable on the Miniature Munitions Smart Rack BRU-61/A. This rack is currently in production in the USAF, but has never been qualified to DoN environments, nor flown internally in any variant of F-35. Efforts include a Dual Power modification, ensuring adequate power supplied to BRU-61 to meet the SDBII operating environment. SDB Increment II will continue incremental development to pursue network CENTRIC interoperability. SDB increment II is a key component of the Air Force's Global Strike Task Force CONOP.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Contractor Risk Reduction	2.380	0.000	0.000	0.000	0.000
Funding provides for SDB risk reduction efforts.					
FY 2009 Accomplishments: Participate in the 42-month risk reduction phase with Boeing and Raytheon. The Navy's participation is to ensure Navy-unique requirements are included in SDB II design and development and to understand interoperability requirements.					
Conduct Weapon Data Link Testing/JSUW/HTVSF	9.900	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604329N: Small Diameter Bomb	b (SDB)	PROJECT 3072: Small	l Diameter B	omb (SDB)	
B. Accomplishments/Planned Program (\$ in Millions)			1			
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Funding provides for Joint Surface Warfare (JSuW) and Hard Targe weapon data link testing. FY 2009 Accomplishments: Conduct Weapons Data Link message development and testing. of these new message sets into the JSF when the aircraft become provided to accomplish JSuW efforts and HTVSF efforts. Both efforts survivability in development of Small Diameter Bomb II.	This will facilitate the incorporation s available. In FY09, funding is					
SDB II Weapon Support and Integration		6.638	43.717	44.091	0.000	44.091
Funding provides for design, development, integration and testing of	f SDB for the F35 B and C.					
FY 2009 Accomplishments: Government and Support Contractor participation in risk reduction and Other Trade Studies, Joint Strike Fighter fit checks, Shipboard Environmental Effects, System Safety, Climatic/Dynamic Environmentality, multiple weapon carriage system requirements, and other include F-35 Lockheed Martin and JPO support of SDB II integration created to ensure SDB II would maintain its FY16 IOC date.	Suitability, Electromagnetic nents, catapulted/arrested landings risk reduction activities. Efforts					
FY 2010 Plans: Support SDB II Prime contractor source selection and Engineering (EMD); begin integration of SDB II with JSF B and C, to include wi efforts.						
FY 2011 Base Plans: Continue support of EMD; integration of SDB II with JSF B and C.						
Accompli	shments/Planned Programs Subtotals	18.918	43.717	44.091	0.000	44.091

UNCLASSIFIED

R-1 Line Item #102 Page 4 of 11

Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy

APPROPRIATION/BUDGET ACTIVITY

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE PROJECT

1319: Research, Development, Test & Evaluation, Navy

PE 0604329N: Small Diameter Bomb (SDB) 3072

3072: Small Diameter Bomb (SDB)

C. Other Program Funding Summary (\$ in Millions)

		•	FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	Base	000	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
WPN/223800: Small Diameter	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.341	898.500	914.841
Bomb II											
0604329F: Small Diameter Bomb	122.568	155.415	153.505	0.000	153.505	162.393	128.606	69.545	68.529	0.000	1,115.894
MPAF/0207327F: Small Diameter	0.000	0.000	0.000	0.000	0.000	0.000	39.408	57.122	74.184	1,583.416	1,754.130
Bomb											

D. Acquisition Strategy

The SDB Increment II acquisition strategy is to conduct a full and open competition to select up to two contractors to compete during a planned 42-month risk reduction phase prior to entering EMD. This competition began April 17, 2006 with the signature of contracts to the competing contractors: 1) Raytheon and 2) the team of Boeing and Lockheed Martin. An EMD and Production Fixed Price-type contract is planned to be awarded in FY 2010.

The Navy funding will support Navy-unique efforts for SDB Increment II, such as aircraft integration, ship suitability, studies and analysis, and program management and government in-house support. These efforts will be performed on several cost-type contracts or through cost reimbursable work requests to government activities and contractors.

E. Performance Metrics

Earned Value Management (EVM) will be implemented on the EMD contract with the winning weapon contractor after Milestone B, currently scheduled for April 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PROJECT

1319: Research, Development, Test & Evaluation, Navy

PE 0604329N: Small Diameter Bomb (SDB)

3072: Small Diameter Bomb (SDB)

Product Development (\$ in Millions)

•	•	•											
				FY 2	2010	FY 2 Ba		FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	McDonnell Douglas Corp St. Louis, MO	4.393	0.000		0.000		0.000		0.000	0.000	4.393	4.393
Primary Hardware Development	C/CPFF	Raytheon Missile Systems Tucson, AZ	4.393	0.000		0.000		0.000		0.000	0.000	4.393	4.393
Aircraft Integration	C/CPFF	Lockheed Martin Fort Worth, TX	6.579	13.077	May 2010	9.027	Nov 2010	0.000		9.027	46.344	75.027	75.027
Primary Hardware Development (JSuW)	C/CPFF	Raytheon Missile Systems Tucson, AZ	2.600	0.000		0.000		0.000		0.000	0.000	2.600	2.600
Ship Suitability	C/CPFF	McDonnell Douglas Corp St. Louis, MO	7.799	18.278	Dec 2009	4.000	Dec 2010	0.000		4.000	17.079	47.156	47.156
Primary Hardware Development	C/CPFF	TBD TBD	0.000	2.622	May 2010	10.330	Dec 2010	0.000		10.330	20.659	33.611	33.611
Aircraft Integration	C/FFP	TBD TBD	0.000	0.000		2.131	Dec 2010	0.000		2.131	11.314	13.445	13.445
		Subtotal	25.764	33.977		25.488		0.000		25.488	95.396	180.625	180.625

Remarks

McDonnell Douglas Corp and Raytheon Missile Systems Primary H/W Development Prior Year through FY09 includes costs for the 42-month risk reduction phase. Funding for McDonnell Douglas represents the Boeing/Lockheed Martin team. Primary H/W and Aircraft Integration TBD in FY10 and out reflects the winning SDB II contractor. FY09 Primary H/W RMS, Tucson, AZ supports the JSuW efforts. Ship suitability efforts for McDonnell Douglas Corp include efforts for BRU-61 Carriage System. Award dates for Primary Hardware Development and Aircraft Integration in FY 2010 have slipped to May to correspond with the SDB II Milestone B decision.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PROJECT

1319: Research, Development, Test & Evaluation, Navy

PE 0604329N: Small Diameter Bomb (SDB)

3072: Small Diameter Bomb (SDB)

Support (\$ in Millions)

				FY 2	:010	FY 2 Bas		FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	SS/CPFF	McDonnell Douglas St. Louis, MO	5.935	0.000		0.000		0.000		0.000	0.000	5.935	5.935
Software Development	SS/CPFF	Various Various	7.290	0.000		0.000		0.000		0.000	0.000	7.290	7.290
Software Development	WR	NAWC WD China Lake, CA	1.490	0.000		0.000		0.000		0.000	0.000	1.490	Continuing
Software Development	C/CPFF	Lockheed Martin Ft. Worth, TX	0.000	0.000		4.381	Nov 2010	0.000		4.381	13.679	18.060	18.060
Studies & Analyses	C/CPFF	Johns Hopkins University Baltimore, MD	2.695	0.000		0.000		0.000		0.000	0.000	2.695	2.695
		Subtotal	17.410	0.000		4.381		0.000		4.381	13.679	35.470	33.980

Remarks

Studies and Analyses include Navy activities to define CONOPS and better define Navy-specific and interoperability requirements, such as Weapon Data Link ACTD, Seeker Trade Studies, and Data Link Trade Studies. Software Development efforts are in support of JSuW JCTD incorporation of J.11 Message Set into Strike Weapons. Software Development for JSF is the Block 3.X OFP which supports the SDB II program.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PROJECT

1319: Research, Development, Test & Evaluation, Navy

PE 0604329N: Small Diameter Bomb (SDB)

3072: Small Diameter Bomb (SDB)

Test and Evaluation (\$ in Millions)

				FY 2	2010	FY 2 Ba	2011 se	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various/ Various	Various Various	0.364	2.500	Jan 2010	0.000		0.000		0.000	1.250	4.114	Continuing
Operational Test & Evaluation	WR	COMOPTEVFOR China Lake, CA	0.710	0.300	Oct 2009	0.000		0.000		0.000	8.811	9.821	Continuing
Developmental Test & Evaluation	C/CPFF	Lockheed Martin Ft. Worth, TX	0.000	0.000		1.600	Nov 2010	0.000		1.600	29.187	30.787	30.787
Test Assets	C/FFP	TBD TBD	0.000	0.000		1.674	Jan 2011	0.000		1.674	24.814	26.488	26.488
Test Assets	C/CPFF	McDonnell Douglas St. Louis, MO	0.000	0.000		0.100	Nov 2010	0.000		0.100	0.500	0.600	0.600
		Subtotal	1.074	2.800		3.374		0.000		3.374	64.562	71.810	57.875

Remarks

Developmental T&E Various in FY2010 supports wind tunnel testing. Test assets include weapon assets (TBD - dependent upon winning SDB II weapon contractor) and BRU-61 Smart Racks (McDonnell Douglas) required for DT and OT.

Management Services (\$ in Millions)

				FY 2	:010	FY 2 Ba	-	FY 2	2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Services	C/CPFF	TBD Not Specified	0.371	0.767	Jan 2010	0.000		0.000		0.000	0.000	1.138	1.138

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy

BA 5: Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604329N: Small Diameter Bomb (SDB)

PROJECT

3072: Small Diameter Bomb (SDB)

Management Services (\$ in Millions)

				FY 2	2010	FY 2 Ba		FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWC WD China Lake	12.839	3.739	Nov 2009	3.095	Nov 2010	0.000		3.095	15.111	34.784	Continuing
Government Engineering Support	WR	Various Various	6.401	2.034	Nov 2009	4.490	Nov 2010	0.000		4.490	19.333	32.258	Continuing
Program Management Support	WR	Various Various	0.681	0.200	Nov 2009	3.063	Dec 2010	0.000		3.063	14.977	18.921	Continuing
Program Management Support - MSS	C/CPFF	Various Various	0.409	0.000		0.000		0.000		0.000	0.000	0.409	0.409
Travel	MIPR	ASC20OG Eglin AFB, FL	1.006	0.200	Oct 2009	0.200	Oct 2010	0.000		0.200	1.000	2.406	Continuing
		Subtotal	21.707	6.940		10.848		0.000		10.848	50.421	89.916	1.547

Remarks

	Total Prior Years Cost	FY:	2010	FY 2	2011 ase	FY 2	-	FY 2011 Total	Cost To	Total Cost	Target Value of Contract
Project Cost Totals	65.955	43.717		44.091		0.000		44.091	224.058	377.821	274.027

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy										DATE: February 2010																			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)															PROJECT 3072: Small Diameter Bomb (SDB)														
Fiscal Year		2009			20	10	0		2011			2012				20	2013		2014			2015							
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones Risk Reduction Phase																													
Acquisition Milestones							MS B	△ cdr										Δ	MSC	 									
Source Selection							EMD	Dow	nselec	t																			
Engineering Management and Development (EMD) (Development and Integration)																													
Ship Suitability	Ship Suitability Dual Power SDB II Qualification																												
Test & Evaluation Milestones Development Test Operational Test OT will complete FY16																													
Production Milestones LRIP I LRIP II (LRIP III will be first production for DoN -	90 upite)																		LR	IP I Aw	vard		LRIF	P II Awa	ard		LRIP	III Awa	ard
Production Deliveries (USAF) DoN Production Deliveries begin in FY16																								LRIP I	(144)		LR	IP II (2	50)

UNCLASSIFIED

R-1 Line Item #102 Page 10 of 11

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE**

PROJECT 1319: Research, Development, Test & Evaluation, Navy PE 0604329N: Small Diameter Bomb (SDB) 3072: Small Diameter Bomb (SDB)

BA 5: Development & Demonstration (SDD)

Schedule Details

	Sta	Start				
Event	Quarter	Year	Quarter	Year		
Risk Reduction Phase	1	2009	2	2010		
Milestone B (MS B)	2	2010	2	2010		
Critical Design Review	3	2010	3	2010		
EMD Downselect	2	2010	2	2010		
Engineering Manufacturing and Design (EMD)	2	2010	4	2015		
Ship Suitability	1	2009	3	2009		
Ship Suitability Dual Power	3	2009	4	2011		
Ship Suitability SDB II Qualification	4	2009	4	2012		
Developmental Test	2	2014	2	2015		
Operational Test	3	2015	4	2015		
MS C	1	2013	1	2013		
LRIP I Contract Award (USAF Only)	1	2013	1	2013		
LRIP II Contract Award (USAF Only)	1	2014	1	2014		
LRIP III Contract Award (USAF and DoN)	1	2015	1	2015		
LRIP I Deliveries (USAF only)	2	2014	1	2015		
LRIP II Deliveries (USAF only)	2	2015	4	2015		